TE 104

ADVANCED TECHNICAL MATHEMATICS

Grand Rapids
Community
College

STUDY GUIDE

for

CHALLENGE EXAM

REVISED
JUNE 2014

CREDIT EXAMINATION   **Grand Rapids Community College**

DEPARTMENT: Manufacturing

COURSE TITLE: TE 104 Advanced Technical Mathematics
Three (3) Credits

I. COURSE DESCRIPTION:

Mathematical operations that cover interpretation and conversion of measurement units, significant figures, applied geometry, trigonometric functions of right and oblique triangles, charts, graphs, basic statistical calculations and formulas.

II. STUDENT PERFORMANCE OBJECTIVES:

METRICS and MEASUREMENTS:
1) Convert units of measure and solve problems using measurement rules of numbers

APPLIED GEOMETRY AND TRIGONOMETRY:
2) Identify triangles as scalene, isosceles, equilateral and right
3) Identify corresponding parts of triangles
4) Identify parts of a circle
5) Solve problems using geometric principles involving chords, arcs, central angles, perpendicular lines and tangents
6) Identify the sides of a right triangle with reference to any angle
7) Determine values of functions for a right triangle
8) Determine angles which correspond to given functions/values of a triangle
9) Express angles in degrees, minutes and seconds and its decimal equivalent
10) To determine variations of functions as the size of the angle changes
11) Compute unknown angles of right triangles given two sides
12) Compute unknown sides of right triangles given an angle and a side
13) Compute functions of angles bigger than 90 degrees
14) Use the Laws of Sine and Cosine to compute unknown angles of oblique triangles given two sides and the angle opposite them
15) Use the Laws of Sine and Cosine to compute unknown parts of oblique triangles given two angles and a side.

GRAPHS AND STATISTICS:
16) Solve basic graphical and statistical problems using statistical formulas. Including:
      Analysis of bar, circle and line graphs
      Basic Calculations of mean, median, percentile and other averages
      Grouping Data – with variance and standard deviation
      Statistical Process control

III. TESTING CONDITIONS – When you come to take the exam, you should bring:

    1) Pencils
    2) Eraser
    3) Scientific Calculator - Note: A cell phone or computer CANNOT be used as a calculator.

IV. TEST FORMAT and PROCEDURES – to take this test, you must:

    1) Pay fee to take the test at Cashier's Office. Bring receipt when you come to take the test.
    2) Go to Academic Testing Center at GRCC and fill out request form. The Testing Center is on the third floor of the Student Center.
    3) Make an appointment to take the test at the career resource center.
    4) Take the test.
    5) The Testing Center will grade the test and give you the results directly or they may call you with results depending on how busy they are there at the time.

PLEASE NOTE: CREDIT WILL BE POSTED ON A CREDIT/NO CREDIT BASIS.
SOME COLLEGES DO NOT GIVE CREDIT FOR COLLEGE EXAMINATIONS.
BE SURE TO CHECK WITH YOUR TRANSFER COLLEGE.

Test will be completed within a three (3) hour period.
See sample problems for specific types of questions.
You must pass with a minimum of 70% for successful completion of this exam.